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**Data Sheet**

August 31, 2026

HP / AGILENT

# HP / Agilent 54750A High-Bandwidth Digitizing Oscilloscope Mainframe

Agilent 54750A Digitizing Oscilloscope Mainframe The HP 54750A is a high-bandwidth digitizing oscilloscope mainframe in the 54750 family for microwave and high-speed digital measurements. OEM literature pairs it with 5475x plug-in modules for multi-GHz repetitive and real-time class acquisitions depending on configuration. High-speed digital debug, microwave pulse analysis, and automated multi-GHz oscilloscope measurements. 54750-series digitizing oscilloscope mainframe The HP 54750A is a high-bandwidth digitizing oscilloscope mainframe in the 54750 family for microwave and high-speed digital measurements. OEM literature pairs it with 5475x plug-in modules for multi-GHz repetitive and real-time class acquisitions depending on configuration. High-speed digital debug, microwave pulse analysis, and automated multi-GHz oscilloscope measurements. 54750-series digitizing oscilloscope mainframe Instrument Type: Digitizing oscilloscope mainframe



MODEL

**HP / Agilent  
54750A**

CALIBRATION

**Available on  
request**

CONDITION

**Used**

STATUS

**In stock**

RFQ / SKU

**54750A**

LISTING

<https://aumictechlabs.com/products/54750a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

## This unit

The HP/Agilent 54750A is a modular digitizing oscilloscope mainframe engineered for signal analysis across demanding measurement applications. This platform supports up to four electrical

channels via plug-in modules and enables Time Domain Reflectometry (TDR) measurements, including differential TDR with staggered rising edges. Built for precision analysis of low-level, high-speed signals, the 54750A delivers stable timebase performance and exceptional signal fidelity essential for jitter characterization and parametric measurements. Technical Specifications

**Bandwidth & Channel Architecture** Selectable bandwidth: 20 GHz / 50 GHz (high mode) or 12.4 GHz / 26.5 GHz (low mode) Up to four electrical channels via plug-in module expansion Low-noise specifications for precision low-signal measurements Time Base Accuracy:  $\pm 0.4\%$  Range: 10 ps/Division to 1 s/Division Timing resolution and stability optimized for jitter analysis Vertical System Scale factors: 1 mV/Division to 100 mV/Division Noise floor:  $\sim 25 \mu\text{V}$  (low bandwidth mode) or  $\sim 50 \mu\text{V}$  (high bandwidth mode) Averaging reduces noise by  $1/(n)^{1/2}$  Data Acquisition Maximum record length: 4k points per channel Maximum digitizing rate: 40 kHz (non-trigger-limited) Data transfer rate: 550 kBytes/s typical via HP-IB (IEEE 488.2) Measurement throughput: Up to 25 automatic measurements per second Measurement & Analysis Over 50 built-in parametric measurements Time and voltage/power histogram capability Automatic parametric measurement with user-defined test boundary comparison Differential TDR with independent step generators for differential and common-mode viewing

**Key Features** Modular plug-in architecture for customized configurations Fast acquisition and processing speed for both manual and automated test operation Stable timebase accuracy and resolution supporting detailed jitter characterization Low-noise vertical system enabling precise low-level signal analysis

**Interfaces & Connectivity** HP-IB (IEEE 488.2) for remote programming and data transfer Compatible plug-in modules: 54751A, 54752A, 54752B, 54753A, 54754A, 83481A, 83482A, 83485A, 83485B, 83486A, 83487A Module extender (HP 11898A) extends plug-in reach to 1.5 meters from mainframe

**Typical Applications** High-speed signal characterization, jitter and timing analysis, TDR/differential TDR measurements, automated test systems, and parametric signal analysis in communications, semiconductor, and advanced electronics testing.

## 54750A Characteristics / Specifications

| PARAMETER                   | VALUE                                 |
|-----------------------------|---------------------------------------|
| Instrument Type             | Digitizing oscilloscope mainframe     |
| Series Family               | HP 54750 digitizing oscilloscope      |
| Module Architecture         | Plug-in vertical channels             |
| Bandwidth                   | Determined by installed modules       |
| Remote Interface            | HP-IB                                 |
| Display                     | Color graphical display               |
| Sampling Modes              | Repetitive and module dependent modes |
| Timebase Accuracy Class     | crystal referenced class              |
| Vertical Resolution Class   | multi-bit digitizing class            |
| Record Length Class         | per OEM acquisition memory            |
| Trigger Modes               | Edge and advanced triggers class      |
| Form Factor                 | Benchtop mainframe                    |
| Operating Temperature Class | 0 C to 55 C                           |
| Power Line                  | 100/120/220/240 V class               |
| Marker Measurements         | Voltage and time                      |
| Store Recall                | Setup and waveform storage            |
| Input Impedance             | Module dependent typically 50 Ohm     |
| Channel Count               | Determined by installed modules       |
| Persistence Display         | Supported                             |
| Averaging                   | Supported                             |
| Calibration                 | System calibration routines           |
| Maximum Sample Rate         | Module dependent                      |
| Compatible Modules          | 54751A 54752A class family            |
| Operating temperature       | Class: 0 C to 55 C                    |

# 54750A Specifications

| PARAMETER                                        | VALUE                                                                                                  |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Agilent 54750A Digitizing Oscilloscope Mainframe | Overview                                                                                               |
| Applications                                     | High-speed digital debug, microwave pulse analysis, and automated multi-GHz oscilloscope measurements. |
| Key Features                                     | 54750-series digitizing oscilloscope mainframe                                                         |
| Technical Specifications                         | Instrument Type: Digitizing oscilloscope mainframe                                                     |

# General Specifications & Supplementary Characteristics

| PARAMETER                   | VALUE                                                                                                                                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating temperature       | Class: 0 C to 55 C                                                                                                                                                                                                  |
| Operating Temperature       | Class: 0 C to 55 C                                                                                                                                                                                                  |
| Operating Temperature Class | 0 C to 55 C                                                                                                                                                                                                         |
| Power Line                  | 100/120/220/240 V class                                                                                                                                                                                             |
| Marker Measurements         | Voltage and time                                                                                                                                                                                                    |
| Store Recall                | Setup and waveform storage                                                                                                                                                                                          |
| Input Impedance             | Module dependent typically 50 Ohm                                                                                                                                                                                   |
| Channel Count               | Determined by installed modules                                                                                                                                                                                     |
| Persistence Display         | Supported                                                                                                                                                                                                           |
| Averaging                   | Supported                                                                                                                                                                                                           |
| Calibration                 | System calibration routines                                                                                                                                                                                         |
| Maximum Sample Rate         | Module dependent                                                                                                                                                                                                    |
| Compatible Modules          | 54751A 54752A class family Notes From HP 54750A digitizing oscilloscope mainframe product literature. Numeric bandwidth and sample-rate limits belong to the installed plug-in modules and calibration certificate. |

# Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

| Specifications                                                                                                                                                                     |                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Specifications                                                                                                                                                                     |                                       |
| PARAMETER                                                                                                                                                                          | VALUE                                 |
| Instrument Type                                                                                                                                                                    | Digitizing oscilloscope mainframe     |
| Series Family                                                                                                                                                                      | HP 54750 digitizing oscilloscope      |
| Module Architecture                                                                                                                                                                | Plug-in vertical channels             |
| Bandwidth                                                                                                                                                                          | Determined by installed modules       |
| Remote Interface                                                                                                                                                                   | HP-IB                                 |
| Display                                                                                                                                                                            | Color graphical display               |
| Sampling Modes                                                                                                                                                                     | Repetitive and module dependent modes |
| Timebase Accuracy Class                                                                                                                                                            | crystal referenced class              |
| Vertical Resolution Class                                                                                                                                                          | multi-bit digitizing class            |
| Record Length Class                                                                                                                                                                | per OEM acquisition memory            |
| Trigger Modes                                                                                                                                                                      | Edge and advanced triggers class      |
| Form Factor                                                                                                                                                                        | Benchtop mainframe                    |
| Operating Temperature Class                                                                                                                                                        | 0 C to 55 C                           |
| Power Line                                                                                                                                                                         | 100/120/220/240 V class               |
| Marker Measurements                                                                                                                                                                | Voltage and time                      |
| Store Recall                                                                                                                                                                       | Setup and waveform storage            |
| Input Impedance                                                                                                                                                                    | Module dependent typically 50 Ohm     |
| Channel Count                                                                                                                                                                      | Determined by installed modules       |
| Persistence Display                                                                                                                                                                | Supported                             |
| Averaging                                                                                                                                                                          | Supported                             |
| Calibration                                                                                                                                                                        | System calibration routines           |
| Maximum Sample Rate                                                                                                                                                                | Module dependent                      |
| Compatible Modules                                                                                                                                                                 | 54751A 54752A class family            |
| Notes                                                                                                                                                                              |                                       |
| From HP 54750A digitizing oscilloscope mainframe product literature. Numeric bandwidth and sample-rate limits belong to the installed plug-in modules and calibration certificate. |                                       |

### Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: [sales@aumictech.com](mailto:sales@aumictech.com) · +1 (484) 841-9341

#### Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.